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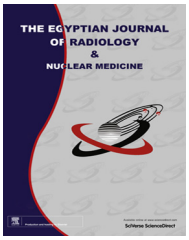

CASE REPORT

Invasive mole of the uterus: A description of two cases managed by hysterectomy

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KEYWORDS

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Invasive mole;
Suction and evacuation;
Hysterectomy;
Chemotherapy

Abstract Gestational trophoblastic disease (GTD) is a term used for a group of pregnancy-related tumors. Gestational trophoblastic neoplasia (GTN), is recognized as the most curable gynecologic malignancy. However, many cases are resistant to first line chemotherapy. We present cases of invasive mole. They were diagnosed as a vesicular mole on ultrasonography and underwent suction and evacuation but vaginal bleeding recurred with plateau and rising B-hcg with intramyometrial vascular lesion. Hysterectomy was done that indicated invasive mole. Patients were cured of their symptoms. Surgical therapy (hysterectomy) with chemotherapy has shown to achieve remission in these cases especially with resistance to chemotherapy and in perimenopause.

1. Introduction

Gestational trophoblastic disease is divided into molar and non-molar tumors. Non-molar tumor are grouped as Gestational trophoblastic neoplasia (GTN) (1). GTN are classified histologically into three distinct subgroups invasive mole, choriocarcinoma, and placental site trophoblastic tumor (PSST) (2).

Invasive mole follows approximately 10–15% of complete hydatiform mole. The prognosis for most cases of GTN is characterized by the presence of wide spread of metastasis. Invasive mole (IM) is common manifestation of GTN characterized by the presence of whole chorionic villi that accompany excessive trophoblastic overgrowth and invasion. These tissues penetrate deep into the myometrium sometimes involving the peritoneum or vaginal vault. Such moles are locally invasive but generally lack the pronounced tendency to develop widespread metastases typical of choriocarcinoma. IM originates exclusively from complete or partial mole (3,4).

2. Case series

2.1. Case Report 1

A 30 yr old married female, G3P2 + 1, with history of vaginal delivery, was admitted to our hospital with regular heavy menstrual bleeding since 12 months after evacuation of vesicular mole. She had done ultrasonography and was diagnosed as vesicular mole, she underwent suction and evacuation procedure since 12 months ago. She had irregular vaginal bleeding with persistent elevated and plateau B-hcg, so she started

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chemotherapy in the oncology department for over 11 months with B-hcg plateau at level of 20 IU/L for over 2 months with regular menses. The patient came complaining of positive urine and serum pregnancy test with no pregnancy for months and regular menses.

On examination her vitals were stable. On per abdominal examination uterus was just palpable and was corresponding to a gestational age of 12 weeks size. On per speculum examination minimal bleeding was present. On bimanual examination uterus was bulky 12 weeks' gestation age, no adnexal mass palpable. All investigations were done which were normal and chest X-ray was normal. Ultrasound done well defined mass about 2 cm with multiple small cystic spaces within the myometrium which was suggestive of invasive mole (Fig. 1). Serum β-hCG done which was 20 mIU/ml. Oncologist opinion was taken and patient was advised to do hysterectomy because of resistant chemotherapy and non-compliant patient after her request and consent. So, subtotal abdominal hysterectomy with the preservation of both ovaries was done because of young age of patient.

Cut section of uterus revealed multiple grape like vesicles invading the myometrium (Fig. 2). Histopathological examination report of uterus came which was suggestive of Invasive mole.

2.2. Case Report 2

A 45 year old lady, gravida 4, para 3 + 1, presented to our department with irregular vaginal bleeding since 2 months and elevated beta-human chorionic gonadotropin (B-HCG) level after evacuation of vesicular mole with persistent elevated B-hcg. The B-HCG was persistently elevated (5312 IU/ml). Following this, B-HCG still continued to rise, reaching up to 7204 IU/ml. Her physical examination was unremarkable. A transvaginal ultrasound scan was done that showed a heterogeneous mass about 4 cm in the myometrium, fundal region of the uterus, away from the endometrium (Fig. 3), Color Doppler showed prominent blood flow signals within the lesion suggestive of neovascularization and Pulsed Doppler showed low vascular impedance arterial blood flow. Both ovaries were unremarkable. Based on the clinical history of molar pregnancy in the past, with persistently elevated B-HCG levels, a sonographic diagnosis of an invasive mole of the uterus was established. Chest X-ray was done which did not reveal any abnormality. Oncologist opinion was taken and patient was advised to do hysterectomy because of old age, completed family size and non-compliant patient after her request and consent. So, total abdominal hysterectomy with preservation of both ovaries was done. Cut section of uterus revealed multiple grape like vesicles invading the myometrium (Fig. 4). Histopathological examination report of uterus came which was suggestive of Invasive mole. Patient was discharged with follow up. Medical therapy – Inj. Methotrexate 1 mg/kg/day im alternate day with inj. Folinic acid 0.1 mg/kg in four doses two cycles.

Fig. 1 Ultrasound showing intramyometrial mass about 2 cm.

3. Discussion

GTN arises when the normal regulatory mechanism controlling the proliferation and invasiveness of trophoblastic tissue are lost. These are rare and constitute less than 1% of all gynecologic malignancy. They are characterized by a distinct tumor marker β-hCG and have varying tendencies toward local invasion and distant metastasis (5). Vascular invasion and metastasis rarely occur in Invasive mole (6). Demonstration of myometrial vascular mass without the evidence of fetal material on USG in the context of an elevated β-hCG is highly suggestive of GTN (IM) (7,8).

An invasive hydatiform mole is a form of GTN that occurs due to abnormal proliferation of placental trophoblast.

It most commonly occurs after the evacuation of GTD. It is characterized by the presence of edematous chorionic villi with trophoblastic proliferation that invades into the myometrium of the uterus or to adjacent structures such as the vagina, vulva, broad ligament, and can also invade into the uterine vessels (9). Invasive mole is unlike choriocarcinoma, the latter is without the presence of chorionic villi. It is important to distinguish between invasive mole and choriocarcinoma, as the former has a more favorable outcome.

The clinical presentation of an invasive mole includes vaginal bleeding, an enlarged uterus and high urinary or serum bHCG level, typically after the evacuation of a molar pregnancy. The interval from an antecedent molar pregnancy is usually less than six months. Choriocarcinoma can occur after a hydatiform mole or even after a normal pregnancy, with an interval of more than six months, sometimes lasting for nearly ten years. BHCG levels are much higher in choriocarcinoma than in invasive mole (10).

Approximately 8% of patients with complete moles will develop a malignant tumor after evacuation (11). Therefore serial values of bHCG should be obtained after evacuation, which if persistently elevated, should raise the suspicion of GTN. The Cancer Committee of the International Federation of Gynaecologists and Obstetricians (FIGO) has established the following guidelines for the diagnosis of post molar gestational trophoblastic neoplasia (8): four values or more of bHCG plateaued over at least three weeks, an increase in bHCG of 10% or greater for three or more values over at least 2 weeks, the histological diagnosis of choriocarcinoma, and persistence of bHCG six months after molar evacuation.

Ultrasound has become the standard protocol in aiding in diagnosis of suspected GTN (12). B-mode ultrasound is useful

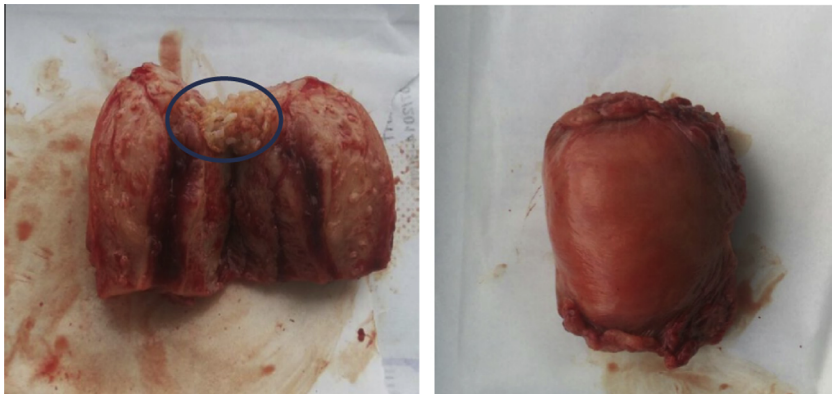

Fig. 2 Hysterectomy specimen showing intramyometrial mass with vesicles.

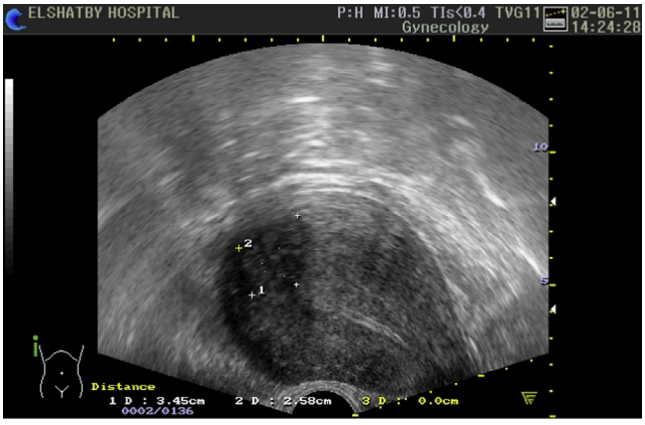

Fig. 3 Ultrasound with intramyometrial mass nearly 4 cm.

in detecting the presence of abnormal uterine masses. Sonographically, an invasive hydatidiform mole, a placental site trophoblastic tumor, and choriocarcinoma typically exhibit a heterogenous, hyperechoic, solid mass with cystic vascular spaces, located within the myometrium (13,14). Color Doppler imaging aids in the assessment of angiogenesis and neovascularization characteristic in these tumors, seen as prominent blood flow signals in various directions suggestive of arterial and venous flow (15). Doppler velocimetric findings in patients with invasive moles, placental site trophoblastic tumors and choriocarcinoma are similar in that they all may exhibit low-impedance arterial flow and high velocity (10). Bilateral enlarged ovaries due to theca lutein cysts may also be seen (10).

The differential diagnosis of highly vascular, intramural lesions of the myometrium seen by ultrasound includes arteriovenous malformation, gestational trophoblastic neoplasia, and interstitial pregnancy (8,16). It is possible to distinguish between these entities, using a combination of both biochemical findings and ultrasound appearances. Demonstration of a vascular mass within the myometrium without evidence of fetal material, on ultrasonography, in the context of an elevated bHCG is highly suggestive of GTN (8,17).

The pathological diagnosis of an invasive mole is rarely made, because most cases are conservatively treated, without the need for hysterectomy. Invasive mole is rarely metastatic, if it does occurs, it is usually to the lungs. Metastases are much more common in choriocarcinoma, common sites being the lower genital tract, brain, liver, lung, kidney, and the gastrointestinal tract (18). The absence of metastases helps to rule to

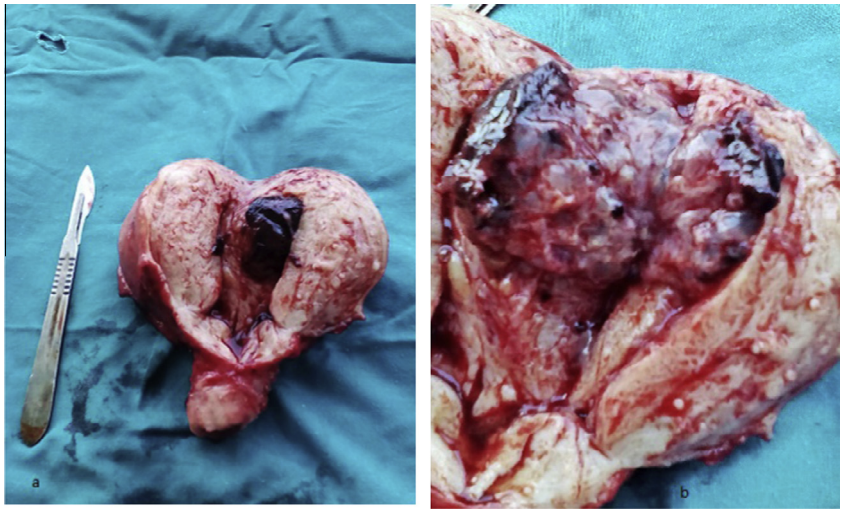

Fig. 4 Hysterectomy specimen showing hemorrhagic mass in the uterus with vesicles on cutsection.

choriocarcinoma. The FIGO committee on Gynecological oncology has made recommendations for the metastatic work up of GTN, which includes a chest X-ray, liver CT when indicated or a whole body CT scan in patients with lung metastases, and a brain MRI (or CT) when there is a suspicion of cerebral metastases.

Management of an invasive mole includes treatment with chemotherapy as well as continued monitoring of bHCG. Patients with GTN should be followed with weekly quantitative bHCG levels until normal for three consecutive weeks, then monthly for 12 months (19). Ultrasound and Color Doppler have also been shown to be an effective tool in predicting the resolution or persistence of GTN post treatment (20). Dilatation and curettage are not recommended due to the risk of uterine perforation (9). With methotrexate, complete remission is achieved in most non-metastatic and low risk cases (21,22). Even in the presence of disseminated disease, most of the cases are amenable to treatment with almost 100% survival. Hysterectomy is common in old age, resistance to chemotherapy, poor compliance and completed family size.

4. Conclusion

Although the development of effective chemotherapy has resulted in improved survival of the patients with GTD, hysterectomy remains an important adjunct in the treatment of the selected subset of patients (6). Surgical therapy (hysterectomy) performed with chemotherapy has shown to achieve remission.

Conflicts of Interest, Grant Support and Financial Disclosures

None.

Ethical approval

Written informed consent was obtained from the patients for publication of this case report and accompanying images.

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